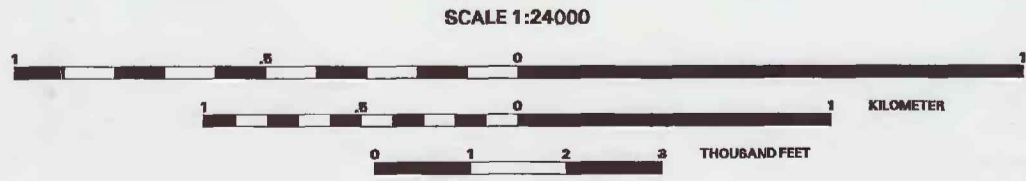




Topography from the Andover, VT quadrangle (1971 edition)
Contour interval 20 feet
Map projection is polyconic
Digital map units in State Plane Coordinate System
National Geodetic Horizontal Datum of 1927
Roads and town boundaries from the Vermont Center for
Geographic Information, Inc.



Approximate Mean Declination
14°30' West, 1971

Geology mapped by Ratcliffe in 1992-1995.
Digitized by Laura Cadmus and Gregory Walsh.

Digital Bedrock Geologic Map of the Andover Quadrangle, Vermont

by
N.M. Ratcliffe¹
1996

AFFILIATIONS:
U.S. Geological Survey
Reston, Virginia 20192
Vermont Agency of Natural Resources,
Vermont Geological Survey,
Waterbury, Vermont 05671

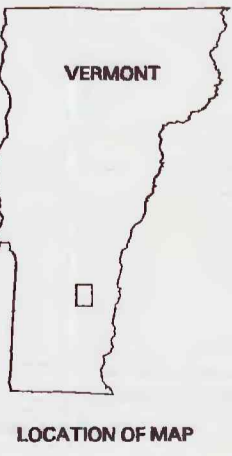
Explanation of Map Symbols

- Contacts
Outcrops (areas of exposed bedrock examined in this study)
Thrust fault, teeth on upper plate
Overturned thrust fault, teeth show dip, bar on upper plate

Description of Map Units

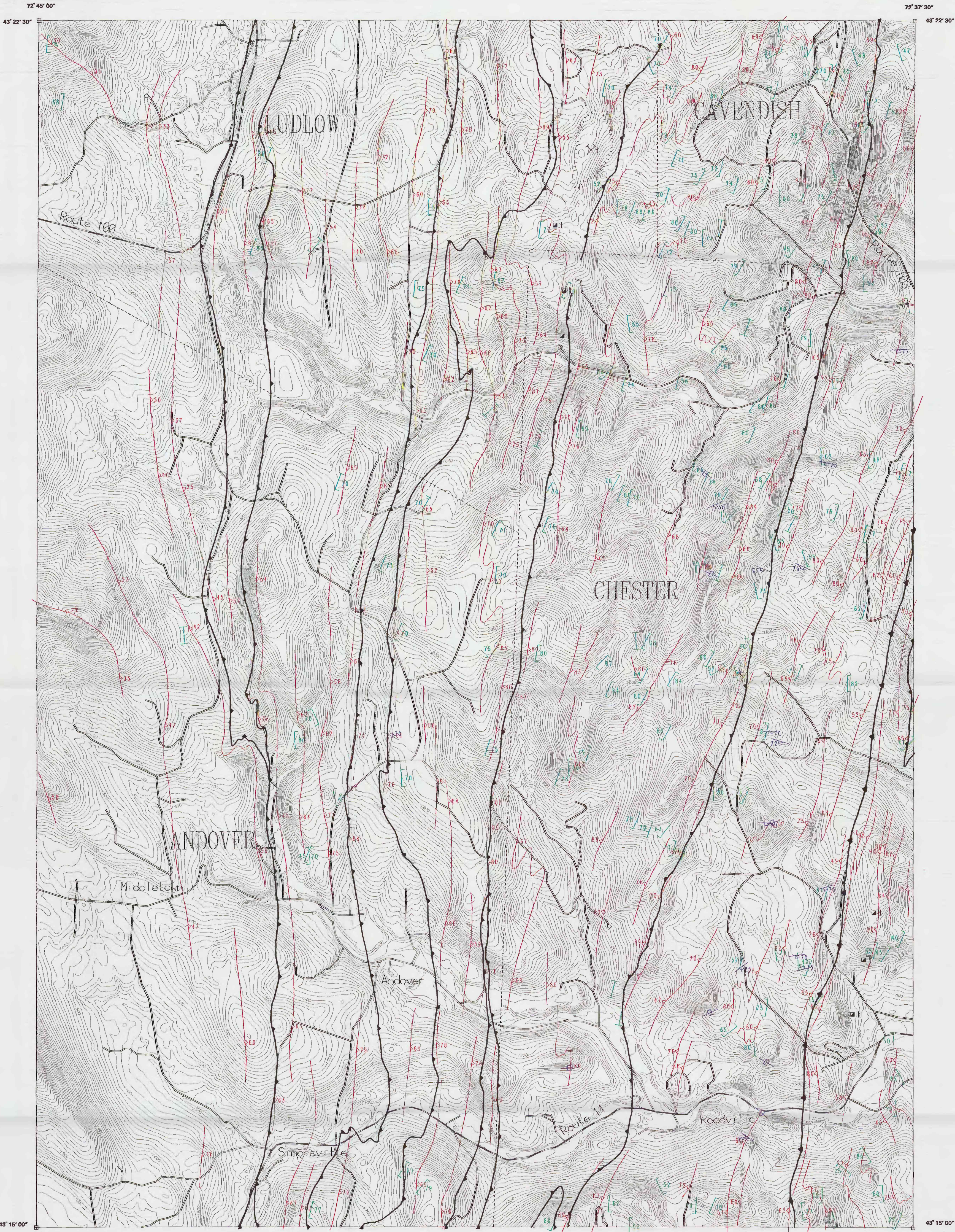
(Not necessarily in stratigraphic order; minerals listed in order of increasing abundance)

- DEVONIAN DIKES**
Dg Biotite-muscovite granite
- DEVONIAN AND SILURIAN WAITS RIVER FORMATION**
DSwr Dark-gray garnet-muscovite phyllite
- UNNAMED AMPHIBOLITE AND QUARTZITE**
DScv Thin-bedded, amphibolite, quartzite and granofels
- ORDOVICIAN CRAM HILL FORMATION**
Och Black biotite schist and slabby quartz granofels
Ochf Finely laminated, hornblende-biotite-plagioclase-quartz granofels (felsic volcaniclastic)
- ORDOVICIAN BARNARD GNEISS**
Oba Fine-grained, dark-green amphibolite; minor felsic layers
Obm Mixed white, hornblende-biotite-plagioclase-quartz rock and hornblende-biotite-quartz-plagioclase gneiss
Obf Gray to white, medium-grained, biotite-quartz-plagioclase gneiss possible felsic volcanic rock
- ORDOVICIAN CRAM HILL FORMATION IN THE SPRING HILL FOLD**
Ochv Well-layered felsic to intermediate volcaniclastic rocks
Ochq Quartzite and chlorite-muscovite-quartz granofels
- ORDOVICIAN MORETOWN FORMATION**
Oml Pinstriped muscovite-biotite-quartz-plagioclase granofels and quartzite
Ombs Black, slabby, rusty biotite-quartz schist, locally carbonaceous
Omgs Greenish-gray to gray-garnetiferous, chlorite-muscovite-plagioclase-quartz granofels and schist
Oma Amphibolite
Omhsf Gray to greenish, hornblende feldspar schist, and cotecule
Omhf Gray to tan-gray, feldspathic quartzite
Ombq Black to gray, massive to bedded, highly jointed, vitreous quartzite
Omfgc Light-green to gray, well-bedded, pinstripe biotite-chlorite granofels, cotecule and schist (resembles Oml)
Omfgs Green feldspathic schist
Omgt Gritty feldspathic quartzite
Omak Green, pitted, highly weathered ankeritic greenstone
Omws Fine-grained, carbonaceous + f-garnet-biotite-muscovite-quartz schist and phyllite at Whitestone Hill
Omwa Amphibolite
Omwc Magnetite cotecule and quartzite
Omww Black to gray vitreous quartzite
Omwfq Feldspathic quartzite
Omwwv Volcaniclastic andesite breccia
Omwwg Green metasilstone
Omd Hornblende-plagioclase granofels or coarse-grained amphibolite
- ORDOVICIAN AND CAMBRIAN STOWE FORMATION**
OCs Light-green, biotite-chlorite-quartz schist + f-magnetite
OCsa Amphibolite
OCags Light-green to gray, garnet-chlorite-muscovite-quartz schist and feldspathic biotite granofels
- CAMBRIAN OTTAUQUECHEE FORMATION**
Co Dark-gray to black, fine-grained carbonaceous biotite-muscovite-quartz schist
Coq Black to gray, vitreous quartzite
- CAMBRIAN AND LATE PROTEROZOIC PINNEY HOLLOW FORMATION**
CZph Light-green, fine-grained lustrous + f-magnetite + f-garnet, chlorite-muscovite-quartz schist
CZpha Amphibolite
CZphms Green-gray, metasilstone
CZphf Light gray, biotite-plagioclase-quartz granofels (possible felsic volcaniclastic rock)
CZphgt Muscovite-chlorite-quartz-pebble schist and grit
- CAMBRIAN AND LATE PROTEROZOIC PLYMOUTH FORMATION**
CZpfq Gray-tan, pinstriped, biotite-plagioclase quartzite and schistose quartzite
CZpbs Dark-gray, carbonaceous, biotite-muscovite schist
- LOWER CAMBRIAN AND LATE PROTEROZOIC TYSON FORMATION**
CZts Gray to tan-gray, well-laminated, fine-grained quartz phyllite
CZtg Greenish + f-magnetite, chlorite-muscovite-quartz schist
CZtq Conglomerate and feldspathic grit
- LATE PROTEROZOIC HOOSAC FORMATION**
CZhrab Rusty, biotite-muscovite-albite-quartz schist
CZh Muscovite-biotite-albite-quartz schist and granofels
CZht Rusty, garnet-muscovite-biotite-albite schist
CZhtm Amphibolite
- ORDOVICIAN TO LATE PROTEROZOIC ULTRAMAFIC ROCKS**
OZu Serpentine and talc
OZt Talc schist
- MIDDLE PROTEROZOIC MOUNT HOLLY COMPLEX**
Intrusive Rocks
Yp Pegmatite
Ygg Granitic gneiss
Ygp Felchville trondhjemite gneiss-gray to whitish gray, medium- to fine-grained, biotite trondhjemite gneiss
Yhd Hornblende dioritic gneiss
Yhda Fine-grained, equigranular hornblende-plagioclase amphibolite
Yt Biotite trondhjemite gneiss at Terrible Mountain
Metasomatic or Migmatitic Rocks
Yfg White to pinkish gray, medium-grained, apitic to gneissic magnetite-felsic gneiss
Ymg Pinkish gray, streaked, epidote-biotite-plagioclase-microcline-granitic migmatite gneiss
- Paragneiss and Metavolcanic Rocks**
Ybg Well-layered, biotite-quartz-plagioclase gneiss and amphibolitic gneiss
Ya Amphibolite
Yrg Rusty muscovite-quartz schist, garnet-quartzite and rusty sulfidic amphibolite
Ycs Calc-silicate gneiss, minor marble, diopside-hornblende rock, actinolite marble
Ym White to gray, phlogopite-calcite-marble, graphite marble, actinolite-dolomite marble
Yrs Rusty quartz-muscovite + f-chlorite schist to richly garnetiferous quartz schist
Ymcs Greenish lustrous, chlorite-rich, muscovite-quartz schist, a retrograde variety of Yrg or Yrs
Ylq Massive, vitreous, well-jointed quartzite on Ludlow Mountain
Yq Thin-bedded, white to gray, vitreous quartzite and garnet quartzite
Yhg Medium- to coarse-grained, hornblende-plagioclase gneiss



This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards (or with the North American Stratigraphic Code). Any use of trade names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Plates 1 and 2 are part A and the database is part B of this Open-File Report. Both parts are available from the Vermont Geological Survey, telephone (802) 241-3488.



Explanation of Map Symbols

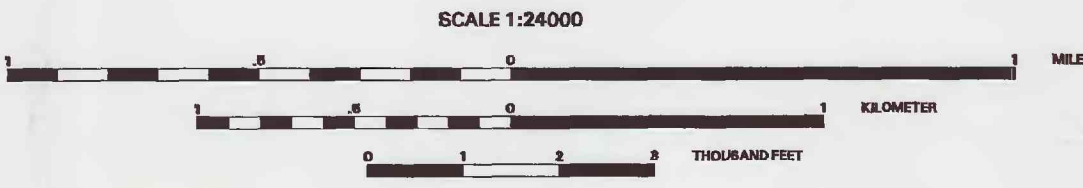
- Foliation (Schistosity)
- Strike and dip of inclined foliation on interpretive form-lines
 - Strike and dip of vertical foliation on interpretive form-lines
- Brittle Features
- Strike and dip of inclined joint
 - Strike and dip of vertical joint
- Cleavage
- Strike and dip of inclined cleavage
 - Strike and dip of vertical cleavage
- Thrust Faults
- Thrust fault, teeth on upper plate
 - Overturned thrust fault, teeth show dip, bar on upper plate
- Quarries and Mines
- Talc
 - Active quarry
 - Inactive mine
 - Limit of large quarry or strip mine

Plates 1 and 2 are a paper representation of the digital bedrock geologic information for the Andover Quadrangle located in Windsor county, Vermont. All of the bedrock geology data were obtained from Ratcliffe (1996), and were digitally compiled on a personal computer system using PC ARC/INFO version 3.40 Plus by Environmental Systems Research Institute, Inc.. The data shown on Plate 1 were exported to ARC/INFO version 7.0 where solid color fill patterns were generated, and faults were drawn using symbols from a lineset (alcwrg.lin) from ALACARTE software (Fitzgibbon and Wentworth, 1991). The completion procedures discussed in Walsh and others (1994) were used in the preparation of this report, with the exception of the topography. The topography was obtained from a photographic negative separate of contour lines from the Andover, VT (1971 edition) U.S.G.S. 7.5-minute topographic quadrangle. The negative was scanned on an IDEAL FSS 8000 raster-format scanner. The raster image was vectorized using GTX OSR Contour version 2.00 by GTX Corporation, Inc., and converted into an unattributed line coverage in ARC/INFO version 7.0.

These plates are derivative products and should not serve as the primary source for the complete geologic information for this area; the correct reference should be number 2 below:

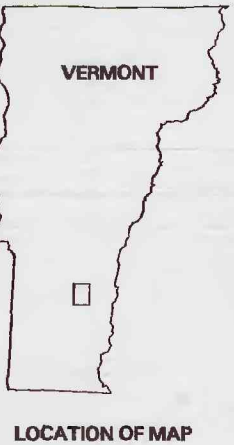
- Fitzgibbon, T.T., and Wentworth, C.M., 1991, ALACARTE user interface: AML code and demonstration maps, Version 1.0: U.S. Geological Survey Open-File Report 91-587.
- Ratcliffe, N.M., 1996, Bedrock geologic map of the Andover Quadrangle, Windsor county, Vermont: U.S. Geological Survey Open-File Report 96-32, scale 1:24000.
- Walsh, G.J., Ratcliffe, N.M., Dudley, J.B., and Merrifield, T., 1994, Digital bedrock geologic map of the Mount Holly and Ludlow quadrangles, Vermont: U.S. Geological Survey Open-File Report 94-229, scale 1:24000.

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